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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/683,858	10/10/2003	Vladislav Vashchenko	P05701	1770

7590 07/01/2005

Jurgen Vollrath
588 Sutter Street #531
San Francisco, CA 94102

EXAMINER	
LUHRS, MICHAEL K	

ART UNIT	PAPER NUMBER
2824	

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/683,858	VASHCHENKO ET AL.	
	Examiner	Art Unit	
	Michael K. Luhrs	2824	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 May 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *updated search history*.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 10-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Dolan et. al. USPN 6,417,078.

Re: claim 10, Dolan et. al. teaches mask 22 Fig. 3 shown with multiple openings and is used during doping (implanting oxygen ions) of isolation region (lines 26-30, col. 3) to form selected area buried oxide isolation. Re: claim 1-12, the device is annealed line 17, col. 3, and a second annealing occurs line 29-30, col. 4, see the multiple annealing temperatures in example 1 col. 5-6, at 1000-1350 °C for 4-6 hours and subsequent 1000°C degree ramp.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Polata et. al. USPN 3,855,007.

Polata et. al. teach a mask of layers 51 and 61 in Fig. 11 having multiple perforations i.e. openings 56 and 62, which is used during doping of the isolation region 31, line 49-50, col. 6 and lines 58-59 col. 6. Annealment is expressed in line 47, column 7 having predetermined time of 20 minutes at 645 °C (lines 54-56, col. 7).

5. Claims 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Wang et. al. USPN 6,440,805.

Wang et. al. mask of Fig. 2, numeral 200 lines 65-67, col. 2. for isolation region 206 (line 36, col. 2), forms regions 312 (amongst others) above 206 see Fig. 2 as the active areas.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 13-15 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sandana et. al. USPN 6,222,253 (hereinafter as "Sandana") in view of Mouli USPN 6,503,783.

Re: claim 13, Sandana teach mask 55, Fig. 11 for forming SIO BOX isolation region 51, by implanting oxygen , the spotted oxygen coalescence (of lines 46-7, col. 2), forms a continuous buried layer. Sandana lacks the forming of active region above the isolation layer. The active region above the isolation layer is taught by Mouli for the purpose of having an area that will serve as the device area. Since Mouli and Sandana are both from the same field of endeavor, the purpose disclosed by Mouli would have been recognized in the pertinent art of Sandana. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to add the active region above the isolation layer in order for there to be active device area with which to build the device.

Re: claim 14, Sandana teaches the spotted implants are formed by using mask 55 of Fig. 11 shown with intermittent openings. Re: claim 15, Sandana teaches that these implants are provided as an SOI technique but lacks the epitaxial layer and high diffusion drive. Mouli forms a BOX SOI; follows with a epitaxial layer 110, on top of the SIMOX (lines 27-31, col. 4), and adds heat steps for drive-in (line 29-30, col. 6) for the purpose diffusing the dopant (lines 16-7, col. 5). Since Mouli and Sandana are both from the same field of endeavor, the purpose disclosed by Mouli would have been recognized in the pertinent art of Sandana. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to follow with the epitaxial layer and diffusion drive since epitaxy growth provides a silicon layer with which to form the device and follow with diffusion drive in order to situate the dopant and one would be motivated to utilize steps that are already known in order to build the device.

Re: claim 17, Sandana provides anneal (line 1, col. 5). Re: claim 18, Sandana teaches elevated temperature 1000°C (line 11, col. 5) and a second time (line 19-20, col. 5) above 1100°C.

9. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sandana et. al. USPN 6,222,253 and Mouli USPN 6,503,783 as applied to claim 13 above in view of Yu USPN 6,274,910.
Sandana and Mouli lack the ESD device. Yu teaches an ESD device on SIMOX for the purpose of building a ESD device. Since Mouli and Sandana and Yu are all from the same field of endeavor, the purpose disclosed by Yu would have been recognized in the pertinent art of Sandana and Mouli. It would have been obvious at the time the

invention was made to a person having ordinary skill in the art that other devices could be built from the SIMOX method.

10. In response to applicant's arguments, the recitation "forming a continuous isolation region of controlled doping level in a substrate below an active region of a snap back device" as the applicant now amended into claim 10, has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the **purpose of a process** or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

11. Claim 10 provides for the use of a perforated mask, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 10-12 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sandow USPN 5,288,650 teaches SIMOX. Goth USPN 4,151,010 teach masking is well known. Wei et. al. USPN 5,728,612 teaches ESD is well known. Disney USPN 5,843,796 drive-in is well known. Frisina USPN 6,300,171 teach multiple dopant implants. Galster USPN 6,469,368 teach perforated plate for diode bombardment is known. Kuhnert et. al. USPN 5,204,273 implant masks are well known. USPN's 5,014,018; 5,384,475; 6,171,929; 6,440,805; 6,287,930 and JP 35-5143030A are examples of isolation.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael K. Luhrs whose telephone number is 571-272-1874. The examiner can normally be reached on M-F, 8-5.

14. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard T. Elms can be reached on 571-272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael K. Luhrs
06/23/05

OLIK CHAUDHURI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Replacement Sheet

Approved
MKL
5/25/05

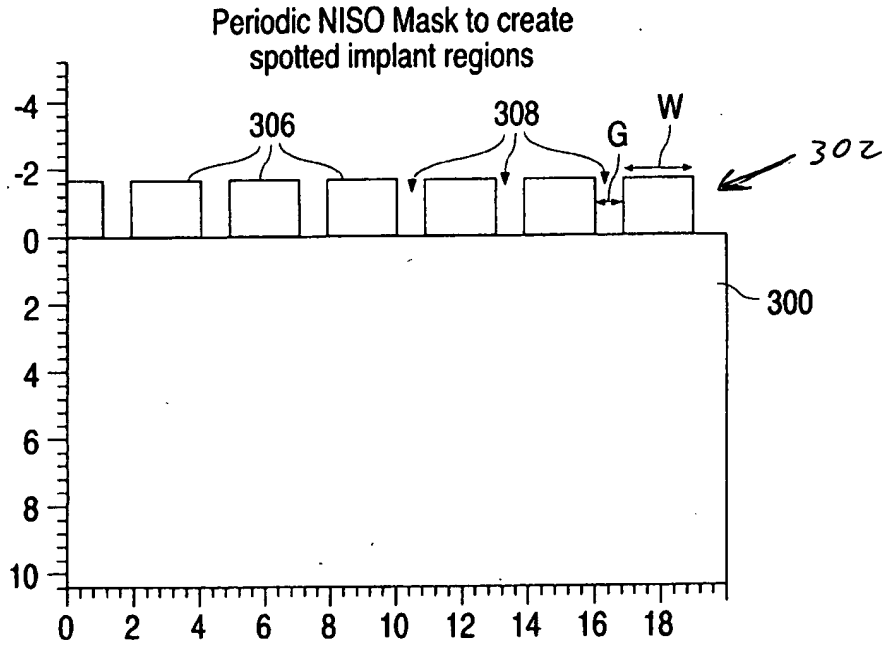

FIG. 3

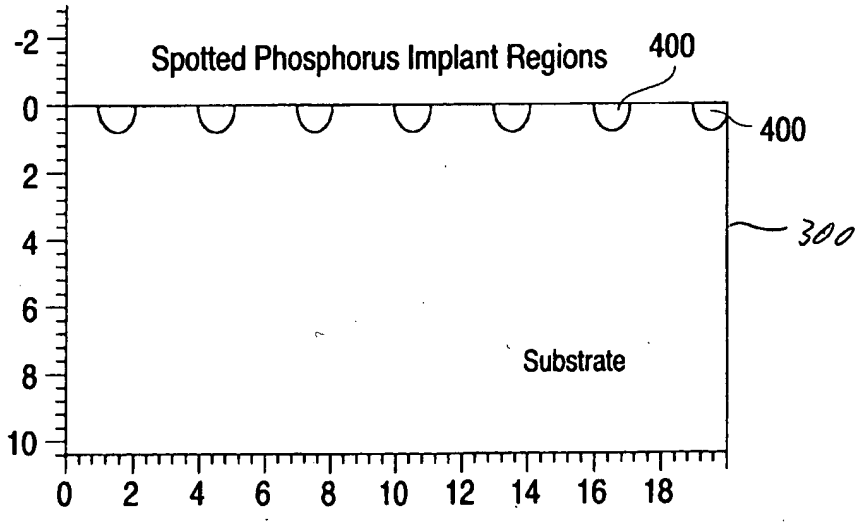

FIG. 4